



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

July 25, 2016

Ms. Susan MacIntosh
Agent for Cutting Edge Formulations, Inc.
MacIntosh & Associates, Inc.
1203 Hartford Avenue
Saint Paul, MN 55116-1622

Subject: Label and CSF Amendment –Revising the directions for use, revising Basic CSF
Product Name: Avenger AG Burndown Herbicide
EPA Registration Number: 82052-4
Application Date: March 30, 2016
Last Resubmission Dated: July 25, 2016
Decision Number: 516924

Dear Ms. MacIntosh:

The amended label and CSF referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, are acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling, submitted to the Agency on July 25, 2016, supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Please note that the record for this product currently contains the following CSF:

- Basic CSF dated 03/30/2016

Continued on Page 2 of 2

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Beth Benbow by phone at 703-347-8072, or via email at Benbow.bethany@epa.gov.

Sincerely,

A handwritten signature in cursive script that reads "Mindy Ondish" followed by the word "for" with a horizontal line underneath it.

Reuben Baris
Product Manager 25
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

GROUP	Z	HERBICIDE
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AvengerTM AG Burndown Herbicide
For control of Grasses and Broadleaf Weeds (both
Annual and Perennial)
In Crop and Non-Crop Areas

ACTIVE INGREDIENT: d-limonene..... 55%
OTHER INGREDIENTS:..... 45%
Total..... 100%

*4.07 lbs d-limonene per gallon

KEEP OUT OF REACH OF CHILDREN
CAUTION



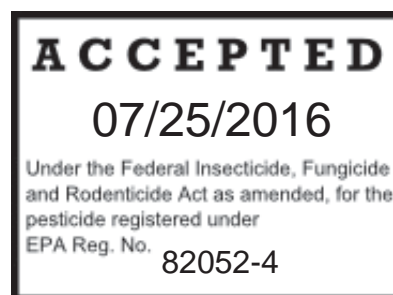
FOR ORGANIC PRODUCTION

Net Contents: 1, 2½, 5 or 55 Gallons

{Front panel: optional marketing claims may be used on any panel}

- OMRI
- Optima
- Non-selective weed killer: controls most weeds, grasses & broadleaves
- Contains citrus oil
- Fast acting
- Made from oranges
- Patented formula
- Clean citrus scent
- Does not stain brick, concrete or pavement

EPA Reg. No. 82052 - 4
EPA Est. No. 82052-GA-1



Manufactured by:
Cutting Edge Formulations, Inc.
3057 Summer Oak Place
Buford, GA 30518

GROUP	Z	HERBICIDE
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Avenger™ AG Optima Burndown Herbicide

*For control of Grasses and Broadleaf Weeds
(both Annual and Perennial)
In Crop and Non-Crop Areas*

ACTIVE INGREDIENT: d-limonene.....	55%
OTHER INGREDIENTS:.....	45%
Total	100%

*4.07 lbs d-limonene per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**



FOR ORGANIC PRODUCTION

Net Contents: 1, 2½, 5 or 55 Gallons

{Front panel: optional marketing claims may be used on any panel}

- OMRI
- Non-selective weed killer: controls most weeds, grasses & broadleaves
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PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

FIRST AID	
If on Skin or Clothing:	<ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Wash exposed area with soap and water. If irritation persists, seek medical attention.• Call a poison control center or doctor for treatment advice.
If in Eyes:	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lens, if present, after the first 5 minutes. Then continue rinsing eye.• Call a poison control center or doctor for treatment advice
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency information concerning this product, call the National Pesticide Information Center (NPIC) at 1-800-858-7378 seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call your poison control center at 1-800-222-1222.	

Personal Protective Equipment (PPE): Applicators and other handlers must wear:

- Long sleeved shirt and pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations
User should: <ul style="list-style-type: none">• Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.• Remove clothing immediately if product gets inside. Then wash thoroughly and put on clean clothing.

PHYSICAL AND CHEMICAL HAZARDS

Combustible: Do not use or store near heat or open flame.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not use this product until you have read the entire label. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the State or Tribe agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water), is:

- Long sleeved shirt and pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets out of the treated area until sprays have dried.

Product Information: Avenger AG Optima is a broad spectrum weed killer that contains a citrus extract. It is non-selective and controls most annual and perennial weeds, both grasses and broadleaves. **For best performance, complete coverage of target weeds is necessary.** The

product does not translocate. It will affect only those portions of plants that are coated with the spray solution. **Spray until thoroughly wet.**

Weed size influences product efficacy as performance is improved on smaller weeds. Targeted weeds should be six inches in height or less.

Environmental Conditions: Avenger AG Optima is effective over a wide range of environmental conditions. Cool weather may slow the activity of Avenger AG Optima. For best results, spray when ambient high temperatures are expected above 50°F and lows above freezing. On cooler days, spray during the warm part of the day. Allow heavy dew to evaporate prior to Avenger AG Optima applications. Do not apply if windy conditions exist or rain is expected within 2 hours.

Mixing of Avenger AG Optima: Fill the spray tank ½ full with clean water. Add Avenger AG Optima while agitating. Then fill remainder with water.

Tank Mixing of Avenger AG Optima: Fill the spray tank ½ full with clean water. Add any dry formulations and then liquid formulations to the tank. Add Avenger AG Optima while agitating. Then fill remainder with water.

Tank Mix Combinations: When Avenger AG Optima is used in combination with any other products, refer to the respective product labels for rates and methods of application, proper timing, restrictions and precautions. Follow the more restrictive labeling requirements of any tank mix partner.

Compatibility Testing: If the compatibility with another product is not known, a jar test or physical compatibility study should be conducted before tank mixtures are made. To determine compatibility, add the appropriate amount of Avenger AG Optima to a quart jar and mix the correct amounts of other products, bringing the total volume to 1 quart with water. Mix with agitation and then let stand for 5 minutes. Add the dry formulations first, followed by aqueous flowables, and then emulsifiable concentrates last. If the combinations do not precipitate and can be readily remixed, then all products are compatible.

Restrictions

Do not apply more than 1.6 gallons of Avenger AG Optima (6.5 lbs d-limonene) per acre per year. Do not make more than 4 applications per year.

Irrigation and Aerial Applications: Do not apply this product through any type of irrigation system or by aerial application.

Spray Drift Management: Follow directions for minimizing spray drift. Do not allow the herbicide solution to contact desirable vegetation as small amounts can cause severe damage to crops and other desirable plants.

AVOID CONTACT WITH CROP – Intentional or accidental contact (including drift) of Avenger AG Optima with the crop may result in severe damage or loss of the crop.

Application Instructions and Rates

Mix this product in clean water and apply to the foliage of vegetation to be controlled. Spray until weeds are thoroughly wet. Because the underside of the weed leaf may be more susceptible, side sprays are recommended.

Four types of applications are described below, Broadcast, Banded, Spot and Pre-harvest Desiccation. Mixing volumes for two dilution rates are found in Table 1. Apply Avenger AG Optima at a 7-10% mixture depending on the size of the weeds. For smaller, young, actively growing weeds, apply the lower, 7% mixture. But for larger, tough to kill weeds use the higher, 10% mixture. **Use the lowest mixture whenever possible to control weeds.**

Broadcast Applications: Broadcast treatments are used for burn down of unwanted weeds across a field or plot or apply to burn down winter foliage. Make application at pre-emergence or at planting of Avenger AG Optima. Applications must be made before seedling emergence to avoid severe injury. Allow at least 2 days between application and transplanting. Spray until weeds are thoroughly wet.

Banded Applications: Control or Suppression of Emerged Weeds in Row Middles and Between Vines and Trees. Apply Avenger AG Optima at a 7-10% mixture depending on the size of the weeds. Only use the 10% mixture when absolutely necessary to control difficult weeds. Apply by directing spray between the rows and using hooded sprayers to prevent spray contact with crop plants. Keep hoods adjusted to insure adequate contact with weeds while shielding the crop from the herbicide. To minimize drift, do not use nozzles or nozzle configurations that produce fine droplets (mist).

Spot Applications: In cool situations or for tough to kill weeds, a more concentrated spray of d-limonene may be needed. In such situations, a 10% mixture of Avenger AG Optima (1:10 mixture) may be used up to one (1) week before harvest (see Table 1).

Pre-harvest Desiccation of Vegetable Vines: Apply Avenger AG Optima at 7 or 10% mixture to aid in the desiccation of vegetable vines prior to harvest operations. A second application may be necessary to obtain sufficient desiccation.

Table 1. Mixing directions of Avenger AG Optima

Desired spray volume (gallons)	7%	10%
1	9 fl oz	13 fl oz
5	0.35 gal	0.5 gal
10	0.7 gal	1 gal
15	1.05 gal	1.5 gal
25	1.75 gal	2.5 gal
40	2.8 gal	4 gal

Directions for Minimizing Spray Drift:

Spray directly on weeds (or apply with hooded spray equipment to prevent the spray from contacting crop.) Use equipment to direct spray on to the weeds. Do not use mist blowers or any other application techniques, which may result in drift on to desirable vegetation. **Do not allow spray solution to drip, splash or drift on to desirable vegetation; small amounts can cause severe damage to crops.** Use low drift, low pressure nozzles.

These procedures will also reduce the potential for off-target drift and for crop injury:

- Spray hoods must be operated on the ground or skimming across ground surface.
- Operate at ground speeds of no greater than 5 miles per hour to avoid bouncing of the spray hoods.
- Apply when wind speeds are 10 miles per hour or less.

Avenger AG Optima is intended for non-selective weed control in and around all crop and non-crop areas

For USE IN and AROUND ALL FOOD CROPS & NON-CROP AREAS

Crop:	Including:
Bearing and Non-Bearing Tree, Vine and Berry Crops, including:	Berries* Citrus Grapes (wine, table, raisin) Nuts Olives Pomegranate Pome Fruit Stone Fruit
Vegetable Crops, including:	Artichokes Asparagus Brassica (cole) Bulb Vegetables Curcubits Fruiting Vegetables, including: tomato and pepper Leafy Vegetables Legume Vegetables Root and Tuber Vegetables Strawberries
Herb and Spices:	All
Non-Crop Areas:	Including borders, driveways, roadways, sidewalks, around mature landscaping, trees, shrubs, foliage and ornamentals, around buildings, in greenhouses and nurseries, and around flowerbeds.

* Not for use in California on berries of any kind.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store at room temperature. Reclose container of unused portions of Avenger AG.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING

[Plastic containers with capacities equal to or less than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinance. If burned, stay out of smoke.

[Plastic containers with capacities greater than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinance. If burned, stay out of smoke.

Conditions of Sale and Warranty

The **Directions For Use** of this product reflects the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result, because of factors such as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of Cutting Edge Formulations or the Seller. All such risks are assumed by the Buyer.

To the extent consistent with applicable law, Cutting Edge Formulations warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. To the extent consistent with applicable law, Cutting Edge Formulations makes no other express or implied warranty of fitness or merchantability or any other express or implied warranty. To the extent consistent with applicable law, in no case shall Cutting Edge Formulations or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. To the extent consistent with applicable law, Cutting Edge Formulations and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of Cutting Edge Formulations.